

5.0 ENVIRONMENTAL IMPACTS

The following sections describe impacts from the proposed action. Impacts from the adjacent CTF are included for completeness.

5.1 CONSTRUCTION PHASE IMPACTS

Impacts from the construction phase activities are described in the following sections.

5.1.1 Soil or Subsurface Disturbance

Emergency Vehicle Operations Course

Construction of the EVOC would disturb previously undisturbed soil. The straightaway portion would require grading to level the length. The rest of the course would follow the contours of the land, except in places that require cut and fill to follow good engineering practices in designing the course. Suitable grading would occur to allow run-off drainage. In total, approximately 75% of the 60-acre (24.3-hectare) site would be disturbed during construction. However after construction, approximately 40 percent of the site would be covered with the asphalt course, skills pad, parking lot, connex box pad, and shelter pad. All soil disturbance activities would be temporary. Portions of the infield and other areas would be reseeded with native species in accordance with the mitigation action plan located in Appendix C.

National Utility Training Services Site

Soil disturbances for the poles and erected tower structures would occur. The helipad would disturb approximately 100 square feet (9.3 square meters) of pavement with an additional perimeter area of 100 feet (31 meters) for a total of 44,100 square feet (4,097 square meters). Suitable grading would occur to allow run-off drainage. The earthmoving training area would occupy approximately 4 acres (1.6 hectares) and the parking garage would disturb approximately 60,000 square feet (5,574 square meters) of soil. It is estimated that 50 percent of the 40-acre (1.62-hectare) expansion area would be disturbed. All soil disturbance activities would be of limited duration, except in the earth moving area.

Cold Test Facility

Construction of the CTF has been completed.

5.1.2 Liquid Discharges to the Groundwater or Surface Waters

It is not expected that any liquid discharges would be made to the groundwater or surface waters from the construction phase.

5.1.3 Gaseous, Particulate, or Thermal Discharges to the Air

Small quantities of gaseous, particulate, or thermal discharges from typical construction activities, such as trucks for transporting building materials and solid waste, heat and exhaust fumes from construction

equipment motors, or backfilling, could be generated for short periods of time during the construction phase for each site of the proposed action. Watering down soil would control dust emissions.

5.1.4 Radionuclide Releases or Direct Radiation Exposure

Because HAMMER is a nonradiation facility and the three projects described in this EA also are nonradiation projects, there would be no radionuclide releases or direct radiation exposure.

5.1.5 Nonhazardous Solid Waste Generated

It is expected that only small amounts of nonhazardous solid waste would be generated during the construction phase. The addition of nonhazardous waste into an onsite landfill would be small compared to the expected overall waste disposal capacity on the Hanford Site. In addition, other facilities would be expected to have adequate capacity to accept all other waste volumes from the proposed action. All nonhazardous waste would be disposed in accordance with applicable requirements.

5.1.6 Hazardous or Dangerous Waste Generated

Small amounts of potential hazardous/dangerous waste (e.g., solvents) might be expected to be generated during construction. This waste, if generated, would be managed and disposed in accordance with applicable federal and state regulations. Waste that might be generated from the proposed action is expected to be minimal compared to annual waste generation on the Hanford Site.

5.1.7 Hazardous Substances Present

It is not expected that there would be any hazardous substances present during construction of the proposed action.

5.1.8 Disturbance to Previously Undeveloped Areas

The relatively high diversity of forbs and residual sprouting of bitterbrush following the fire indicates the area is recovering from the fire. The nature of the firefighting activity during the June 2000 fire around HAMMER resulted in small unburned sage 'islands' that contain the only remaining sagebrush (Appendix B). It is recommended that areas disturbed by construction of the EVOC facilities be revegetated using species native to the Hanford Site per the mitigation action plan in Appendix C.

5.1.9 Consumption or Commitment of Nonrenewable Resources

Consumption of nonrenewable resources (e.g., steel, concrete, grout, etc.) would occur for each of the planned sites. None of the materials to be used are in short supply. The amount of consumption would be minimal.

5.1.10 Effects on Federal or State Listed, Proposed or Candidate Threatened or Endangered Species

The Hanford Biological Review (Appendix B) states “Burrowing owls are classified as a federal species of concern, a Washington State “candidate” species, a WDFW priority species, and a Hanford Site Biological Resources Management Plan (BRMaP) level III resource. The burrowing owl is a species experiencing recent regional decline and all BRMaP level III resources require mitigation”. To mitigate the potential impacts on the burrowing owl as located on the EVOC, the entrance, parking lot, and two pads were moved south to avoid impacting the nest site.

This Hanford Biological Review (Appendix B) also states “Horned larks, loggerhead shrikes, and western meadowlarks are migratory birds protected under the Migratory Bird Treaty Act (16 USC, Chapter 7, §703), which states it is unlawful to “take” or “attempt to take” any nest or eggs from a migratory bird”. Loggerhead shrikes are also classified as a Washington State "candidate" species. It is advised that if work has not been completed by April 15, 2003, bird avoidance measures be in place to reduce the likelihood of an 'unlawful take' as much as reasonably as possible. As practicable, construction activities would be suspended until the end of nesting season.

5.1.11 Effects on Cultural Resources

The Hanford Cultural Resources Review (Appendix A) was conducted. The review concluded: "There is a finding of no effect to historic properties and no further actions are required". It was further recommended that intermittent monitoring occur by an archaeologist to ensure that potential historic properties are not impacted by project activities. A response from the State Historical Preservation Officer confirmed this conclusion (Appendix A). No adverse impacts under the *National Historic Preservation Act of 1966* are expected.

5.1.12 Effects on any Floodplain or Wetland

The construction would not occur in a 100- or 500-year floodplain nor within any area designated as a wetland.

5.1.13 Effects on any Wild and Scenic River, State or Federal Wildlife Refuge, or Specially Designated Area

The proposed action is outside any Wild and Scenic River corridor, state or federal wildlife refuge, or specially-designated area.

5.1.14 Reasonably Foreseeable Accidents Considered and the Effects

The reasonably foreseeable accidents during construction would be typical construction accidents. Nonradiological risks to personnel from occupational illness or injury are based on statistics for DOE and DOE contractor experience (DOE 2000). The lost workday rate is 63 per 200,000 hours of construction work. The fatality rate is close to zero per 200,000 hours of work. About 2 lost workdays and no fatalities would be expected during the construction phases. All construction personnel for DOE projects would follow approved DOE safety procedures for construction activities. All construction personnel for NUTS would follow Occupational Safety and Health Administration (OSHA) 1910.267

standards. Typical construction hazards would exist; however, the risk of severe accidents would be small.

5.2 OPERATION PHASE AND POST-OPERATION IMPACTS

Impacts from operational activities are described in the following sections.

5.2.1 Soil or Subsurface Disturbance

There would be no soil or subsurface disturbances anticipated during operation of EVOC, NUTS, or CTF, except for the earth moving training area within NUTS. The earth moving area would be continually used. All operations of the proposed action would occur in previously disturbed areas.

5.2.2 Liquid Discharges to the Groundwater or Surface Waters

It is not expected that any liquid discharges would be made to the groundwater or surface waters from operation of EVOC, NUTS, or CTF.

5.2.3 Gaseous, Particulate, or Thermal Discharges to the Air

Small quantities of gaseous, particulate, or thermal discharges from such activities as the motor vehicles on the EVOC course or vehicles/machines involved in activities at NUTS would be generated during routine operations of the proposed action. Small quantities of emissions could occur at the CTF from the simulants as various types of mixing equipment are tested. Small amounts of emissions would occur from vehicles arriving and leaving EVOC, NUTS, and CTF.

The CTF has a design life of 30 years (RPP-5566). It is expected that the design life of NUTS and EVOC also would be approximately 30 years. Eventual decommissioning and dismantlement of EVOC, NUTS, and CTF would comply with applicable regulations and procedures in effect at that time. The impacts of the operations and post-operations of the proposed action are considered to be relatively minor. No substantial increases in the overall emissions are envisioned from the proposed action and no changes to the PSD Permit are expected.

5.2.4 Radionuclide Releases or Direct Radiation Exposure

There would be no radionuclide releases or direct radiation exposure expected from the operation or post-operations of the proposed action.

5.2.5 Nonhazardous Solid Waste Generated

Emergency Vehicle Operations Course

It is expected that only small amounts of nonhazardous solid waste would be generated during the operational phase of the EVOC. Once the sites are decommissioned and dismantled, typical demolition waste might be expected, and no further waste generation would occur. The demolition waste generated

would be disposed into existing landfills. The addition of demolition waste into the existing landfills would be small compared to the expected overall capacity of the landfills. All nonhazardous waste would be disposed of in accordance with applicable requirements.

National Utility Training Services Site

It is expected that only small amounts of nonhazardous solid waste would be generated during the operational phase of NUTS. Once the sites are decommissioned and dismantled, typical demolition waste is expected, and no further waste generation would occur. The demolition waste generated might be disposed into existing landfills. The addition of demolition waste into the existing landfills would be small compared to the expected overall capacity of the landfills. All nonhazardous waste would be disposed of in accordance with applicable requirements.

Cold Test Facility

The CTF would be using nonhazardous and nonradiological simulants and would be capable of accepting, staging, and directing up to 600,000 gallons (2,271,000 liters) of simulants for the testing of tank equipment and training of personnel. Simulants are types of materials that would mimic certain characteristics of the waste contained in the SSTs or DSTs and would be nondangerous and nonradioactive. The CTF would be capable of segregated storage, separate from the CTF tank, of the different types of waste simulants used in the CTF. When a simulant is no longer needed, the simulant would be disposed of in accordance with all applicable regulations and procedures. Typical simulant composition is as follows (RPP-5566).

Simulant	Composition
Insoluble waste with large heavy particles	Silica sand: Median particle size = $275\ \mu\text{m} \pm 20\ \mu\text{m}$ Density = 3 g/mL
Insoluble, high shear strength waste	Kaolin or bentonite clay
Soluble salt	Sodium bicarbonate or sodium nitrate
Concentrated supernatant	Supernatant consisting of sodium nitrate dissolved in water

5.2.6 Hazardous or Dangerous Waste Generated

Small amounts of potential hazardous waste (e.g., waste oil and/or cleaning agents) expected to be generated during operation of the EVOC, NUTS or CTF would be managed and disposed in accordance with applicable federal and state regulations. No hazardous or dangerous waste is expected to be generated during post-operation. Waste generation resulting from the proposed action is expected to be minimal compared to annual waste generation on the Hanford Site.

5.2.7 Disturbance to Previously Undeveloped Areas

There would be no disturbance to previously undeveloped areas during operation and post-operation.

5.2.8 Consumption or Commitment of Nonrenewable Resources

Consumption of nonrenewable resources (e.g., petroleum products, diesel fuel, etc.) would occur during operation and post-operation. The amount of consumption is expected to be small.

5.2.9 Effects on Cultural Resources

There would be no effect on cultural resources during operation and post-operation of the proposed actions.

5.2.10 Effects on Federal or State Listed, Proposed, or Candidate Threatened or Endangered Species

Effects on federal or state listed, proposed, or candidate threatened or endangered species during operation and post-operation are expected to be minimal.

5.2.11 Effects on any Floodplain or Wetland

The proposed actions are outside any floodplains and wetlands.

5.2.12 Effects on any Wild and Scenic River, State or Federal Wildlife Refuge, or Specially Designated Area.

The proposed actions are outside any Wild and Scenic River corridor, state or federal wildlife refuge, or specially designated area.

5.2.13 Reasonable Foreseeable Accidents Considered and the Effects

Emergency Vehicle Operations Course

A reasonably foreseeable accident during operation would be the collision of vehicles or a single vehicle accident that would occur while training on the course. A similar facility located in Shelton, Washington has had a few minor/minimal accidents and no major vehicle accidents or personnel injuries have occurred during the operation of the course. Key in operating a safe EVOC is good instruction and knowing the abilities of each student training on the course.

Potential vehicle accidents are remote since there would be individual runs of vehicles. Possible fires from catalytic converters might occur. In either case, a local fire or police agency would be notified. The soft sand surrounding the EVOC would prevent errant vehicles from the course from entering Horn Rapids Road to the south or Ila Lane to the east of the EVOC. Physical barriers would be added as necessary. Spills that could occur from accidents would be handled and disposed of in accordance with applicable federal and state regulations.

Hazards common to demolition projects would exist in the post-operation phase of the proposed project. Post-operation would be conducted in conformance with recognized safety codes and regulations to

ensure a safe working environment. Public health and safety would not be affected because the area would be closed to the general public.

National Utility Training Services Site

The Northwest Line Joint Apprentice Training Committee operates a training school on the Oregon coast that consists of steel towers, wood towers with transmission lines, a pole yard, and an indoor pole yard for 'hot sticking' (the use of fiberglass poles with steel attachments for handling of electrically charged lines). This school has been in operation for 40 years with approximately 250 students per year attending. Approximately 3 to 4 minor accidents occur each year. These accidents are classified as non-time loss accidents. In 40 years, only one major accident occurred when a student fell from a pole. It is expected that NUTS would experience a similar minimal accident rate.

Hazards common to demolition projects would exist in the post-operation phase of the proposed project. The post-operation would be conducted in conformance with recognized safety codes and regulations to ensure a safe working environment. Public health and safety would not be affected because the area is closed to the general public.

Cold Test Facility

A reasonably foreseeable accident during testing operations would be falls from scaffolding, hazards commonly associated with the installation of equipment such as electrical hazards, hazards from lifting, or the use of power tools. Accidents occurring from these types of activities are minimal (DOE 2000). Impacts from natural hazards such as floods, tornadoes, earthquakes, or fire will have minimal impact on the CTF (Huckfeldt 2002).

The CTF has minimal reasonable foreseeable accidents because CTF is a nonhazardous, nonradioactive facility. Hazards common to demolition projects would exist in the post-operation phase of the proposed project. The post-operation would be conducted in conformance with recognized safety codes and regulations to ensure a safe working environment. Public health and safety would not be affected because the area would be closed to the general public.

5.3 SOCIOECONOMIC IMPACTS

In a community of over 140,000 persons (PNNL-6415) with a workforce in excess of 8,000 persons on the Hanford Site, the socioeconomic impacts of this proposed action would be expected to be small. Less than two dozen people are expected to be added employment due to the proposed action. There would be no discernible impact to employment levels within Benton and Franklin Counties.

5.3.1 Emergency Vehicle Operations Course

EVOC would bring in emergency service personnel from out of the area and have an expected small impact on the local economy.

5.3.2 National Utility Training Services Site

The direct revenue for the local economy is estimated at over \$1 million based on \$100 per person per day for lodging, meals, and miscellaneous spending. NWPPA estimated 9,000 overnight stays would be required by outside students to receive the proposed training. This number, multiplied by \$100/day, calculates to a conservative estimate of \$900,000 for the first full year of operation.

5.3.3 Cold Test Facility

CTF would be training personnel from the local area, although it is anticipated that vendors staying in the local area would generate a minor amount of revenue while their equipment is being tested at the CTF. This contribution to the local economy would be minimal and have little impact.

5.4 ENVIRONMENTAL JUSTICE IMPACTS

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", requires that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or socioeconomic effects of their programs and activities on minority and low-income populations. Minority populations and low-income populations are present near the Hanford Site (PNNL-6415). The analysis of the potential impacts of the proposed action indicates that there would be minimal impacts to both the offsite population and potential workforce. Therefore, it is not expected that there would be any disproportionately high and adverse impacts to any minority or low-income portion of the community.

5.5 CUMULATIVE IMPACTS

In analyzing the cumulative impacts of the 210 acres (85 hectares) for the projects, approximately half would be disturbed. The CTF and the HAMMER expansion area are located on land that mostly burned during the 24 Command Fire of 2000. The mitigation action plan (Appendix C) requires the reseeded of disturbed areas with native Hanford Site species.

Mitigation of the burrowing owl nesting site would occur by moving the parking lot and entrance to the EVOC from the original site location. Mitigation of the horned larks, loggerhead shrikes, and western meadowlarks nesting sites would occur by not working on the EVOC site during the nesting season.

Waste generation resulting from the proposed action is not expected to be substantial compared to annual waste generation on the Hanford Site. These materials would be managed and recycled or disposed of in accordance with applicable federal and state regulations. Disposal of waste as a result of the proposed action would not substantially affect any associated disposal sites.

The EVOC and NUTS would have an impact on the economy by bringing in students from outlying areas that would be lodged overnight. However, expansion of local lodgings would not be necessary as adequate space is available for most of the year. The CTF would have minimal impact on the economy because training would be for personnel from the local area. The overall economic impact of the proposed actions are estimated to be low.

Based on the analysis from previous sections in this EA, as well as the mitigation measures considered, no substantial cumulative impacts are expected.

5.6 IMPACTS FROM ALTERNATIVES

Alternatives and the no action alternative are discussed in the following sections. Cumulative impacts for the alternatives were not fully analyzed because impacts technically were not viable options and/or data were not developed sufficiently.

5.6.1 Impacts of the No Action Alternative

Emergency Vehicle Operations Course

The no action alternative for EVOC would be not to build the EVOC at HAMMER, which would mean emergency service personnel would not receive local training in emergency response driving. This land to the west of the existing HAMMER would not be disturbed.

National Utility Training Services Site

The no action alternative would be not to fully develop the NUTS and would limit the utility training options to what exists on the original 40 acres (16.2 hectares). This includes trenching areas, wood pole transmission structures, generation facilities, wood pole climbing yard, but would exclude the substation, lattice towers training areas, and at the helipad and the excavation training area would not expand. This would result in inadequate training of utility personnel in these areas, although there would be less direct environmental impact to the immediate area.

5.6.2 Impacts of Alternatives

Emergency Vehicle Operations Course

Relocation of EVOC to another location would involve the additional cost of leasing/purchasing space, in addition to creating safety hazards because of public access. If this were to occur elsewhere, no Hanford Site habitat would be disturbed.

National Utility Training Services Site

The alternative of locating the NUTS Facility at Camp Rilea was eliminated due to the limited amount of land available for locating the planned training structures and that the current training facility is a secondary use of Camp Rilea. The available land near the I-5 corridor was also not feasible due to height restrictions along this corridor that would eliminate some of the necessary training structures. Also, rainy weather in either of these locations would greatly restrict the number of outdoor training days.

Land that was close to the Hammer Facility was also considered. Zoning for this area is for an industrial park, which is unfeasible for a utility training facility.

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